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Sharad Sundaresan

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WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)

CIRA CENTRE, 12TH FLOOR

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EXAMINER

BILGRAMI, ASGHAR H

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/924,731	Applicant(s) SUNDARESAN ET AL.	
	Examiner ASGHAR BILGRAMI	Art Unit 2443	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/26/2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19,21-32,34,35 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19,21-32,34,35 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/28/2009 has been entered.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 32 and 34 are rejected under 35 USC 101 since the claims are directed to non-statutory subject matter. Claim(s) 32 and 34 recite computer readable storage medium which appear to cover both transitory and non-transitory embodiments. The United States Patent and Trademark Office (USPTO) is required to give claims their broadest reasonable interpretation consistent with the specification during proceedings before the USPTO. *See In re Zletz*, 893 F.2d 319 (Fed. Cir. 1989) (during patent examination the pending claims must be interpreted as broadly as their terms reasonably allow). The broadest reasonable interpretation of a claim drawn to a computer readable medium (also called machine readable medium and other such variations) typically covers forms of non-transitory tangible media **and** transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent. *See* MPEP 2111.01. When the broadest reasonable interpretation of a

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claim covers a signal *per se*, the claim **must** be rejected under 35 U.S.C. § 101 as covering non-statutory subject matter. *See In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not directed to statutory subject matter) and *Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C. § 101*, Aug. 24, 2009; p. 2.

The Examiner suggests that the Applicant add the limitation “non-transitory” to the computer readable storage medium as recited in the claim(s) in order to properly render the claim(s) in statutory form in view of their broadest reasonable interpretation in light of the originally filed specification. The Examiner also suggests that the specification may be amended [to include the term “non-transitory computer readable medium” (NOTE: when the specification is silent) OR to add the term "non-transitory" to the disclosed [whatever type of computer readable medium disclosed in the claims and specification]] to avoid a potential objection to the specification for a lack of antecedent basis of the claimed terminology.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19, 25-32, 34, 35 & 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruck et al (U.S. 6,801,949 B1) in view of Rizvi et al (U.S. 6,490,610 B1) and further in view of Hart (U.S. 6,154,765).

5. As per claims 19, 32 & 35 Bruck disclosed, in a distributed computing system comprising a server cluster and a client computer, wherein the server cluster includes a first server and a second server and wherein the client computer includes a client application, a cache (col.17, lines 62-67 & col.18, lines 1-7), and a network access module (NAM) by which the client application communicates with the server cluster (col.2, lines 38-65) a method for providing seamless fail-over of communication between a client computer and the server cluster, the method comprising: establishing, by the client-side NAM, a first connection between the client application and the first server in the server cluster using a Virtual Interface Architecture (VIA) protocol (col.6, lines 45-49) {connection between client and one of the multiple servers}, wherein the VIA protocol assumes a single server is associated with the server cluster having a cluster name (Fig 23 & 28 and col.25, lines 6-24) and wherein the client-side NAM establishes the first connection using connection information of the first server in the server cluster to map the first server to a server name and the cluster name requested by the client application (col.3, lines 60-67 and col.14, lines 31-42); providing, by the client-side NAM, seamless fail-over connectivity from the first server to the second sever in the server cluster in a manner transparent to the client application, when the server cluster automatically switches operation from the first server to the second server (col.24, lines 47-67), wherein providing seamless fail-over connectivity by the client-side NAM comprises: detecting by the NAM, a failure of a first Virtual Interface Architecture (VIA) protocol connection between the first server in the in the server

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cluster and the client application (col.2, lines 38-65) ; the first connection established using connection information of the first server mapped to a server name and cluster name of the cluster server (col.9, lines 31-39); sending, by the NAM, a Server Resolution Protocol request to the server cluster {"Address Resolution Protocol" in Bruck is analogous to "Server Resolution Protocol", they both perform the same functionality} (col.15, lines 20-65) , requesting connection information for a server associated with the server name and the cluster name of the server cluster (col.27, lines 23-45, figures 12, 23 & 38) receiving by the NAM, a Server Resolution Protocol response from the server cluster comprising connection information {connection information is a catchall for IP address ,network address and respective subnet} of the second server; caching by the NAM, the received response in the cache of the client computer (col.17, lines 62-67 & col.18, lines 1-7) such that the cache contains a mapping between the connection information of the second server and the cluster name and the server name (col.15, lines 20-65) and establishing by the NAM, a second Virtual Interface Architecture Protocol connection between the client application and the second server using the connection information of the second server (col.27, lines 46-67 & col.8, lines 1-24) wherein the server cluster does not provide fail-over support to redirect a request from the client application from the first server to the second server when the server cluster automatically switches operation from the first server to the second server (col.2, lines 21-25, 65-67; col.4, lines 29-37 and col.8, lines 57-67) {Digital rule processor can implemented on any nodes (to include client node) on the network and it can perform seamless failover functionality}. Although Bruck disclosed

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the transparent failover functionality of moving a client from first server cluster to second server cluster; sending server resolution protocol request to the server cluster, receiving a response in return; caching the received response that contains the connection mapping information of second/alternative working server and establishing a connection between the client and the second/alternative working server **however** Bruck disclosed all these functionalities being performed by the **server side** management system. In the same filed of endeavor Rizvi disclosed providing an automatic server failover for clients **on the client side** I.E providing on the client side NAM {Network Access Module (NAM) = Client driver interface 204 of figure 2}, transparent failover functionality (col.3,lines 33-38) of moving a client from first server cluster to second server cluster (col.3, lines 65-67 and col.4, lines 1-20); sending request to the server cluster, receiving a response in return (col.3, lines 43-64); caching the received response that contains the connection mapping information of second/alternative working server (col.4,lines 21-32); establishing a connection between the client and the second/alternative working server (col5, lines 13-30).

It would have been obvious to one in the ordinary skill in the art the time the invention was made to have incorporated the client side implementation of server failover as disclosed by Rizvi in a system comprising a server cluster as disclosed by Bruck in order to provide user the control over session state data to the available servers, resulting in reliable connection availability of a working server in case of failure.

Although Burk did disclose that the server cluster provides a highly available Internet Link to achieve transparent web server fail-over and Rizvi disclosed the implementation

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of the failover functionalities of Bruck on the client side. However both Bruck and Rizvi did not explicitly disclose wherein the first and second connection are over a Virtual Interface Architecture (VIA) protocol. In the same filed of endeavor Hart disclosed wherein the first and second connection are over a Virtual Interface Architecture (VIA) protocol (col.8, lines 31-33).

It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have incorporated the implantation Virtual interface Architecture protocol by Hart into the system of seamless fail-over of communication between a client and a cluster of servers as disclosed by Bruck and Rizvi in order to make the system more user friendly resulting in a more reliable and robust network communication between network devices.

6. As per claim 25 Bruck-Rizvi-Hart disclosed the method of claim 19, wherein the Server Resolution Protocol request is sent by User Datagram Protocol (UDP) (Burk, col.14, lines 55-56 & col.15, lines 1-10)

7. As per claim 26 Bruck-Rizvi-Hart disclosed the method of claim 19, wherein the first server and second server store and retrieve relational data by way of Structured Query Language (SQL) commands (Burk, col.7, lines 30-37)

8. As per claim 27 Bruck-Rizvi-Hart disclosed the method of claim 19, wherein the first server is designated as active and the second server is designated as passive

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(Burk, col.2, lines 6-15)

9. As per claim 28 Bruck-Rizvi-Hart disclosed the method of claim 27, wherein the second server periodically sends a keep- alive message to the first server (Bruck, col.3, lines 41-59).

10. As per claim 29 Bruck-Rizvi-Hart disclosed the method of claim 28, wherein the second server assumes designation as active when the first server fails to response to the keep-alive message (Bruck, col.3, lines 10-59).

11. As per claim 30 Bruck-Rizvi-Hart disclosed the method of claim 19, wherein the connection information provided in the server Resolution protocol response contains a plurality of port numbers, wherein each port number corresponded to a different communications protocol (Bruck, col.7, lines 30-37).

12. As per claim 31, 34 & 37 Bruck-Rizvi-Hart disclosed the method of claim 19, wherein the first connection and the second connection comprise VIA formatted packets (Hart, col.8, lines 30-33).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruck et al (U.S. 6,801,949 B1), Rizvi et al (U.S. 6,490,610 B1), Hart (U.S. 6,154,765) and further in view of Brendel et al (U.S. 5,774,660).

15. As per claim 21 Bruck-Rizvi-Hart disclosed the method of claim 19. However Bruck-Rizvi-Hart did not explicitly disclose wherein the establishing the second connection comprises retrieving a network address from the connection information of the second server from the cache. In the same filed of endeavor Brendel disclosed the establishing the second connection comprises retrieving the network address of the second server from the cache (col.2, lines 41-52).

It would have been obvious to one in the ordinary skill in the art at the time the invention was made to have incorporated the establishment of the second connection to the second server by utilization of the second server network address from the cache as disclosed by Brendel in the method of seamless failover of communication between a client and cluster of servers utilizing a Virtual Interface Architecture (VIA) as disclosed by Bruck and Hart in order to make the client and server connection more efficient resulting in a network system that is robust and reliable.

16. As per claim 24 Bruck-Rizvi-Hart disclosed the method of claim 19. However Bruck-Rizvi-Hart did not explicitly disclose further comprises purging the cache prior to

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caching the response from the second server. In the same field of endeavor Brendel disclosed further comprises purging the cache prior to caching the response from the second server (col.3, lines 40-49).

It would have been oblivious to one in the ordinary skill in the art at the time the invention was made to have incorporated purging the cache prior to caching the response from the second server as disclosed by Brendel in the method of seamless failover of communication between a client and cluster of servers utilizing a Virtual Interface Architecture (VIA) as disclosed by Bruck and Hart in order to make the client and server connection more efficient resulting in a network system that is robust and reliable.

17. As per claim 22 Bruck-Rizvi-Hart and Brendel disclosed the method of claim 21, further comprising verifying that the second server maps to the server name (Burk, col.35, lines 46-67 & col.36, lines 7-17).

18. As per claim 23 Bruck-Rizvi-Hart and Brendel disclosed the method of claim 22, wherein verifying that the second server maps to the server name comprises verifying that the second server is responsive to the server name (Burk, col.35, lines 46-67 & col.36, lines 7-17).

Response to Arguments

19. Applicant's arguments with respect to claim 19, 25-32, 34, 35, 37 and 21-24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

20. Applicant's future amendments need to comply with the requirements of MPEP § 714.02, MPEP § 2163.04 and MPEP § 2163.06.

"with respect to newly added or amended claims, applicant should show support in the original disclosure for the new or amended claims." See MPEP § 714.02 and § 2163.06 ("Applicant should * * * specifically point out the support for any amendments made to the disclosure."); and MPEP § 2163.04 ("If applicant amends the claims and points out where and/or how the originally filed disclosure supports the amendment(s), and the examiner finds that the disclosure does not reasonably convey that the inventor had possession of the subject matter of the amendment at the time of the filing of the application, the examiner has the initial burden of presenting evidence or reasoning to explain why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims."). See *In re Smith*, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972) *In re Wertheim*, 541 F.2d at 262, 191 USPQ at 96 (emphasis added).

"The use of a confusing variety of terms for the same thing should not be permitted.

New claims and amendments to the claims already in the application should be scrutinized not only for new matter but also for new terminology. While an applicant is not limited to the nomenclature used in the application as filed, he or she should make appropriate amendment of the specification whenever this nomenclature is departed from by amendment of the claims so as to have clear support or antecedent basis in the specification for the new terms appearing in the claims. This is necessary in order to insure certainty in construing the claims in the light of the specification." *Ex parte Kotler*, 1901 C.D. 62, 95 O.G. 2684 (Comm'r Pat. 1901). See 37 CFR 1.75, MPEP § 608.01 (i) and § 1302.01.

Note that examiners should ensure that the terms and phrases used in claims presented late in prosecution of the application (including claims amended via an examiner's amendment) find clear support or antecedent basis in the description

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so that the meaning of the terms in the claims may be ascertainable by reference to the description, see 37 CFR 1.75(d)(1). If the examiner determines that the claims presented late in prosecution do not comply with 37 CFR 1.75(d)(1), applicant will be required to make appropriate amendment to the description to provide clear support or antecedent basis for the terms appearing in the claims provided no new matter is introduced."

"USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure." In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023,1027-28 (Fed. Cir. 1997). MPEP § 2106. "

The examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider each of the cited references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage disclosed by the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASGHAR BILGRAMI whose telephone number is (571)272-3907. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia L.M. Dollinger can be reached on 571-272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. B./

Examiner, Art Unit 2443

/J Bret Dennison/

Primary Examiner, Art Unit 2443